The Impact of Psychic Distance on Foreign Direct Investment

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The impact of psychic distance on foreign direct investment
Abstract:

I investigate whether different types of distance (cultural distance and psychic distance, as perceived differences and as perceived difficulties) have different consequences on FDI. Using a panel data estimation technique on the gravity model, I find that psychic distance as perceived differences (PDR) has a significant negative impact on outward FDI stock even when controlled for all of the typical gravity model effects and cultural distance. Results suggest that perceived differences deter FDI. Interestingly, I also find that psychic distance in the form of perceived difficulties (PDC) encourages rather than reduces FDI. The findings of this paper contribute to the literature in two ways: I show that (1) psychic distance has an impact on FDI which is not captured by cultural distance, and (2) psychic distance has clearly separable dimensions with different effects (PDR deters FDI; PDC encourages FDI).
INTRODUCTION

In this paper, I am interested in investigating whether different types of distance (cultural distance or psychic distance, as perceived differences or as perceived difficulties) have different consequences on MNE activity. I investigate this in the context of outward bilateral FDI (foreign direct investment), as proxy for MNE location choice. Since FDI represents the highest level of commitment in international trade, carrying the most risk (Habib & Zurawicki, 2002), it is assumed that the process leading to its decision is as thorough and rational as possible to convince all the echelons of decision-makers of the merits of such high-risk venture. FDI is a huge commitment, so decision makers can be expected to use thorough analytical procedures to make rational decisions and limit as much as possible individual biases. Therefore the impact of objective distances (geographic, institutional, cultural, or economic) rather than subjective distance on FDI has been the subject of extensive studies (characterized by a lack of consensus: negative (e.g., Chang & Rhee, 2011; Kogut & Singh, 1988), positive (e.g., Brouthers & Brouthers, 2001; Schneider, Schulze-Bentrop, & Paunescu, 2010), not significant (e.g., Benito & Gripsrud, 1992; Rose & Ito, 2008) influences have been found). For an overview of cultural distance and FDI, I refer to Beugelsdijk, Kostova, Kunst, & Spadafora (2018). Conversely, it is alleged that perceptions, based on incorrect or exaggerated facts or beliefs such as assumptions, stereotypes, half-truths or prejudices (Hothen, 2009), either have no play in this decision-making process or at least are kept under control.

Here I examine the extent to which psychic distance scores (PDR-psychic distance as perceived differences, and PDC-psychic distance as perceived difficulties) aggregated at the country level explain patterns of outward foreign direct investment (FDI). Since psychic distance only “exists in an individual’s mind” and is thus “a highly subjective interpretation of reality” (Sousa & Bradley, 2006: 51), it has been hypothesized in the previous literature that psychic distance could not possibly explain FDI patterns (Benito & Gripsrud, 1992; Dow, 2000; Ellis, 2008). However, decision-making is an individual process, and as such subject to psychic distance. Since undertaking FDI or not (and where) is a decision, perceptions of differences and difficulties should play a role. The wealth of information available to decision-makers does not make it any easier for them neither to select what is relevant, reliable, or not, nor to process it effectively. Decision-makers are but humans and as such only have limited cognitive abilities (Simon, 1957). They cannot have perfect knowledge or understanding of business conditions in a foreign environment, and yet
they have to make investment decisions. They base their decision-making process not only on what they know, but on what they think they know, i.e. what they hold to be true even if it is mostly based on perceptions (psychic distance). National cultures may not only be defined by various attributes upon which they differ (Hofstede’s cultural dimensions, for instance), but also by the way they treat these differences (i.e. neglect or magnify them) and the extent to which they relate them to difficulties. This would explain why the variance in psychic distance is not entirely explained by other distances and suggest that subjective perceptions of potential host markets influence internationalization decisions and thus FDI patterns.

To investigate whether different types of distance have different effects on MNE activity, I rely on a unique database comprised of thousands of individuals’ perceptions of differences (PDR) and difficulties (PDC) related to working with foreign nationals, transformed in average perceptions occurring in country pairs. 33 home countries and 35 host countries are represented in this database. To analyze this data, I apply a panel data estimation technique on the gravity model (Anderson, 2014; Leibenstein & Tinbergen, 1966) with FDI outstock data for the years 2001-2012 as the dependent variable.

I find that psychic distance in the form of perceived differences has a significant negative impact on outward FDI stock even when controlled for all of the typical gravity model effects (Anderson & Wincoop, 2003; Feenstra, Markusen, & Rose, 2001; Frankel & Rose, 2002; Kleinert & Toubal, 2010; van Bergeijk & Brakman, 2010). Results suggest that perceived differences deter FDI. The dyadic psychic distance scores from Håkanson & Ambos (2010) also have a significant and negative effect on FDI and yield the same empirical results as my PDR scores. I also find that the effect of psychic distance in the form of perceived differences on FDI outstock does not become insignificant once cultural distance is added to the models. Unexpectedly, I find that psychic distance in the form of perceived difficulties encourages rather than reduces FDI.

The findings show that (1) psychic distance measures are empirically relevant to explain FDI, (2) psychic distance has clearly separable dimensions with different effects (here I distinguish between perceived differences and perceived difficulties), and (3) psychic and cultural distance are independently related to FDI. In line with what has been argued elsewhere (Håkanson et al., 2016; Håkanson & Ambos, 2010a; Prime, Obadia, & Vida, 2009; Sousa & Bradley, 2006, 2008), I conclude that psychic and cultural distance are two different constructs and should not be considered synonyms.
This paper is organized as follows: the first section argues why cultural distance, psychic distance as perceived differences and psychic distance as perceived difficulties are different, briefly presents the setting in which my analyses occur as well as my approach; the following section describes the data and describes the methodology; the penultimate section presents the empirical findings while the last one discusses the relevance and appeal of the results, recognizes limitations and concludes.

THEORETICAL BACKGROUND

What is FDI?

When venturing abroad, investors are faced with additional costs compared with doing business in their home country. The fact that they are foreigners hinders their legitimacy in the eyes of the local population. This liability of foreignness (Zaheer, 1995) puts them at a disadvantage, compared with locals to identify and evaluate relevant business opportunities and establish local contacts (for suppliers, distributors, for instance); conducting business operations overseas also means additional coordination, communication and control costs, having to learn local regulations (in terms of job safety, environmental protection, new product approval), managing exchange rate exposure, and proficiency in (at least) two sets of tax and reporting requirements (Dewenter, 1995).

Foreign direct investment (FDI) is “the most serious and risky commitment among the international business activities” (Habib & Zurawicki, 2002). FDI provides the highest level of management control, allows a high flexibility in servicing international markets thanks to quick and direct feedback from the market, but is also the most expensive and riskiest mode of entry. FDI means that firms have a permanent physical presence in host markets, they are directly vulnerable to country risk and local governments interventions (inflation, recessions, expropriations, to name a few). Hence even complete ownership is no guarantee of total control.

Antecedents of FDI

*Host market characteristics.* The internationalization processes of the MNEs are driven by both the attractiveness of the host markets, and by perceived distance towards this market (based on concrete facts,
but some of them incorrect, exaggerated, or based on half-truths; Hotho, 2009). Finding out what encourages or deters FDI specifically has been the topic of many studies. The stream of research focusing on characteristics of the host market (regardless of the ones from the home market) is the one providing the most consistent results regarding the drivers of FDI. Higher equity modes (of which a prime example is FDI) are preferred for those host markets which are considered attractive (Erramilli, Agarwal, & Kim, 1997), may it be in terms of their size (Davidson, 1980; Mitra & Golder, 2008) or openness to foreign investments (Li & Guisinger, 1992), while the level of corruption mostly acts as a deterrent (Habib & Zurawicki, 2002).

**Distances.** While the popular press may be under the impression that globalization is erasing cultural differences (thus making the world “flat”, Friedman, 2005) and virtually canceling physical boundaries (the so-called “death of distance”), the different concepts of distance (cultural, administrative, geographic, economic, psychic, institutional, linguistic, cognitive, etc.) have regularly been a very popular topic of research for the past four decades in international business, and virtually all studies based on the traditional gravity model of international trade in economics concur that distance still matters (Brun, Carrère, Guillaumont, & de Melo, 2005): “Contrary to popular impression, the world is not getting dramatically smaller” (Leamer & Levinsohn, 1995: 1387–88).

Most of the literature on distance and MNE activity (e.g., Aybar & Ficici, 2009; Björkman, Fey, & Park, 2007; Brannen & Peterson, 2009; Thomas et al., 2008) suggests a negative impact. Managers are risk averse (Buckley, Devinney, & Louviere, 2007; Dau, 2013; Johanson & Vahlne, 1977). In order to be considered good at (and keep) their jobs, they have to constantly meet demanding performance targets and thus avoid losses. MNEs are looking for new ways to expand their business, either by increasing sales to already existing customers or by conquering new ones. Only after having saturated the markets which they consider safer or less uncertain (Johanson & Vahlne, 1977; Johanson & Wiedersheim-Paul, 1975), be it owing to the small cultural distance (Chari & Chang, 2009; B Kogut & Singh, 1988; Malhotra, Sivakumar, & Zhu, 2011), small geographic distance from the home country (Ellis, 2007; Makino & Tsang, 2011), or to appreciable qualities of the host market (Cheng & Kwan, 2000; Enright, 2009), they will venture to the ones which carry a higher risk. This added difficulty may be because such countries are perceived as more challenging to understand due to larger cognitive (Nootbooom, 2000; Peeters, Dehon, & Garcia-Prieto, 2015), institutional (Banalieva & Dhanaraj, 2013; Berry, Guillén, & Zhou, 2010; Castellani, Jimenez, &
Zanfei, 2013), administrative (Gencturk & Aulakh, 1995), linguistic (Cuypers, Ertug, & Hennart, 2015; Dow & Karunaratna, 2006) or cultural (Kogut & Singh, 1988; Malhotra et al., 2011) distances, or because of intrinsic characteristics of the host market in itself (Barkema & Vermeulen, 1998; Chang & Rosenzweig, 2001).

Even though some have argued that a greater distance can be beneficial (O'Grady & Lane, 1996), in general “the existing IB literature tends to apply a common ‘less is better’ principle to all dimensions of distance” (Beugelsdijk & Mudambi, 2013: 418). The extent of differences in languages and religions (related to cultural distance), in industrial development (related to economic distance), legal systems, regulatory and trade regimes (related to administrative distance), living inconveniences and travel time (related to geographic distance) have been found to have a negative impact on international exchanges in general (e.g., Castellani et al., 2013; Dow & Karunaratna, 2006; Dunning & Lundan, 2008; Evans & Mavondo, 2002; Ghemawat, 2001; Ryder & Dere, 2010). The impact of geographic distance on FDI is generally hypothesized to be negative as well. Ample evidence confirms this (Anderson & Wincoop, 2003; Balogun, 2008; De Benedictis & Taglioni, 2011; De Benedictis & Vicarelli, 2005; Disdier & Head, 2008; Leamer & Levinsohn, 1995), even though there is substantial heterogeneity in effects between sectors and over time (e.g., Coe, Subramanian, Tamirisa, & Bhavnani, 2002; Håkanson & Dow, 2012).

Cultural distance and FDI: lack of consensus

Cultural distance is the most investigated type of distance overall in IB (Em, 2011) and there is a strong assumption in the literature that it is a key determinant for FDI pattern, sequence and performance (Dow, Cuypers, & Ertug, 2016). While its impact on FDI has been extensively investigated, the empirical findings remain inconclusive (Tihanyi, Griffith, & Russell, 2005): some studies find a negative impact, others a positive one, while other a not significant one (see Beugelsdijk et al. (2018) for an overview).

A larger cultural distance is traditionally associated with higher uncertainty and risk (Brannen & Peterson, 2009). Cultural distance has been shown to have a negative impact on FDI in a wide array of studies (Chang & Rhee, 2011; Erramilli, 1991; Flores & Aguilera, 2007; Gomes-Casseres, 1990; Bruce Kogut & Singh, 1988; Li & Guisinger, 1991, 1992; Loree & Guisinger, 1995; Sohn, 1994). Beugelsdijk et al.
(2018) find that cultural distance affects location choice, entry mode, and subsidiary performance. A higher cultural distance deters entry, leads to low risk entry modes, and reduces performance.

Similarly, the related concept of institutional distance (defined as "the difference/similarity between the regulatory, cognitive, and normative institutions of the two countries" (Kostova & Zaheer, 1999: 71)) has also been a variable of choice in FDI studies. It has been shown to impede a firm's ability to absorb and transfer knowledge (Castellani et al., 2013; Eden & Miller, 2004) increasing even more the high risk inherently associated with FDI and thus discouraging from it. The corollary is that it can be argued that cultural and institutional proximity facilitate FDI. Cultural proximity often means a common language (Globerman & Shapiro, 2003) which makes it easier to effectively communicate the workforce and the potential customers alike (Dunning, 1993a; Habib & Zurawicki, 2002; Hofstede, 1983; Sethi, Guisinger, Phelan, & Berg, 2003). Institutional proximity means a greater ease at understanding and respecting normative and cognitive aspects as well as a more familiar environment regarding regulations in place in the host country (Dunning, 2009; Flores & Aguilera, 2007; Jackson & Deeg, 2008; Witt & Lewin, 2007) thus encouraging investments in such setting.

Other studies found a counterintuitive positive impact of cultural distance and institutional distance on FDI (Brouthers & Brouthers, 2001; Erramilli et al., 1997; Padmanabhan & Cho, 1996; Schneider et al., 2010; Thomas & Grosse, 2001). The reasoning behind this finding is akin to the one as to why geographic distance encourages FDI, i.e. the greater need for face-to-face interactions so as to limit as much as possible misunderstandings and increase control over what is done in the subsidiary.

It has also been contended that cultural distance is not a relevant antecedent of FDI, neither to deter nor to encourage it. MNEs may completely ignore cultural distance to take advantage of low wages in practice in distant countries (Sethi et al., 2003) in a logic of arbitrage. In the same vein, some researches failed to find a statistically significant impact of cultural distance on FDI (Benito & Gripsrud, 1992; Rose & Ito, 2008; Sullivan & Bauerschmidt, 1991).

Psychic distance and FDI: lack of investigation
While psychic distance has been a “commonly used – yet puzzling” (Yildiz & Fey, 2016: 831) concept in international business overall for the past four decades, only a handful of studies have used it to investigate FDI (Habib & Zurawicki, 2002). Psychic distance has been understudied as a predictor of the location of FDI activities. One of the few empirical works which feature psychic distance consider it as a moderator in the relationship between market size and FDI (Ellis, 2008). It has been argued to be a poor predictor of FDI activities (Benito & Gripsrud, 1992; Ellis, 2008) and only influences the modes of entry which carry the lowest level of risk (Dow, 2000).

I contend that to study decision-making, the individual-level, subjective and perceptual nature of psychic distance is likely to be relevant. A reason to turn towards psychic distance to investigate FDI is that managers are only boundedly rational, and thus their decision-making process is likely to depend on their personal characteristics (as Hutzschenreuter, Pedersen, & Voberda (2007: 1064) put it: “Since managers do not behave fully rationally, personal experiences or their international backgrounds might affect their decisions”). This suggests that psychic distance plays a significant role in FDI in addition to objective distances.

**CD, PDR and PDC are distinct**

*CD and PD are different in definitions and measures.* The original definitions of psychic distance found in trade economics (Beckerman, 1956; Linnemann, 1966) and in international business (Johanson & Wiedersheim-Paul, 1975) highlighted its emphasis on individuals rather than countries and its role as a disruptor with an emphasis on its damaging consequences similar to other types of distance (cultural, geographic, economic, for instance) without being considered for a substitute for any of them. The distinction between the two started to be blurred with the first attempt to operationalize psychic distance (Kogut & Singh, 1988), marked by the use of Hofstede’s (1980) four cultural dimensions, aggregated into an index in which all of them had the same coefficient, symmetry is assumed, and the individual discarded. While the two concepts were conceptually conceived as distinct from one another, having to find a way to operationalize them for empirical investigation led to much confusion.
In the most recent literature, some define psychic distance in terms of cultural distance (Sethi et al., 2003; Townsend, Yeniyurt, & Talay, 2009; Trabold, 2002) while others bring forth its perceptual and individual-level nature (Evans & Mavondo, 2002; Evans, Treadgold, & Mavondo, 2000; Leonidou & Katsikeas, 1996; Sousa & Bradley, 2006; Sousa, Filipé Lages, Lages, & Filipé Lages, 2011). This division between the two categories of definition (objective vs perceptual) is also present in how psychic distance is measured, relying solely on dimensions of culture (Kogut & Singh (Bruce Kogut & Singh, 1988) and followers) or directly asking individuals about their perceptions of different host markets (Evans & Mavondo, 2002; Sousa & Bradley, 2006; Sousa et al., 2011). Individual perceptions are sometimes aggregated at the country-level to reflect the distance perceived on average by nationals of one country towards another and thus investigate what drives it (Håkanson & Ambos, 2010; Hakanson, Ambos, Schuster, & Leicht-Deobald, 2016). However, a (potential) common level of analysis (country-to-country) should not obscure the fact that psychic distance stems from individuals’ perceptions in their minds while cultural distance is external to the individual and imposes itself on them.

**PDR and PDC are different.** In this paper I consider two different facets of psychic distance: perceived differences (PDR) and perceived difficulties (PDC). They have a low correlation (0.35 on the overall sample; analyses available upon request): while most of the literature on distance has assumed that differences translate into difficulties (higher risk and uncertainty, lower performance and survival, etc.), this association is not as strong for the respondents, who did not systematically equate added differences with added difficulties (in line with Stahl & Tung, 2014, 2015; Stahl, Tung, Kostova, & Zellmer-Bruhn, 2016).

**CD, PDR, PDC and FDI.** So far I have argued (1) that cultural distance and psychic distance are different phenomena, and (2) that perceived differences and perceived difficulties are two distinct dimensions of psychic distance. Do these concepts also have different consequences on MNE activity?

I conjecture that psychic distance is a significant predictor of FDI. Hence my first research question (Does psychic distance play a role in MNE activity?). Then, because cultural distance and psychic distance are different concepts, they likely have different consequences on MNE activity as well, hence my second research question (Does psychic distance have different effects than cultural distance on MNE activity?).
DATA AND METHOD

I apply the gravity model of trade (Tinbergen, 1962; Zwinkels & Beugelsdijk, 2010) to analyze the impact of psychic distance on FDI using the panel data estimation technique. FDI outstock is regressed onto cultural distance, and the dyadic psychic distance scores (PDR-psyche distance as perceived differences and PDC-psyche distance as perceived difficulties) calculated following Em (2016).

Dependent variable

The dependent variable is bilateral FDI outstock (Dunning, 1993). FDI stocks are preferred here to FDI flows because they represent the totality of the commitment of MNEs from one country into another while flows by definition only account for year-to-year variations (Beugelsdijk, Hennart, Slangen, & Smeets, 2010). FDI stocks may be biased in the case of tax havens (Beugelsdijk et al., 2010). The European Union released in June 2015 a list of international tax havens comprising 30 countries. None of these countries is present in the sample used. The data was retrieved from the UNCTAD website (UNCTAD, 2017) and was available for the years 2001-2012. FDI outstock data was logged to obtain a normal distribution.

Independent variables

Psychic distance. The key measure is psychic distance aggregated at the country level, which means an average level of perceived differences (PDR) and of perceived difficulties (PDC) which exists in a home country towards a host country. Aggregating individual perceptions reflected in psychic distance scores provides insight into the average views of firms from the home country towards different host countries (Dow & Karunaratna, 2006; Håkanson & Ambos, 2010).

Individual-level ex ante psychic distance measures, essential to avoid hindsight bias, are very difficult to come by. As acknowledged in Dow & Karunaratna (2006: 580), “measures of a manager's perceptions of psychic distance immediately before a major international decision are difficult to obtain.” While not comprised of individuals holding managerial positions, I had access to such a study environment through the X-Culture project. The context is the following one. Participants worked in extremely diverse teams of about seven over a period of eight weeks. Together they have to write a business plan for an MNE looking for business opportunities in a market in which it is not yet present. As often as possible, each team
member comes from a different country. Such project is undergone in the context of an International Business course.

To obtain the initial psychic distance as differences (PDR) scores, participants replied to the question: “Based on your experience and knowledge about cultures around the world, please rate the degree of difference among the national cultures of the following countries [present in your team]” (the answers ranging from 1-identical, to 5-very different). To obtain the initial psychic distance as difficulties (PDC) scores, participants replied to the question: “Based on your knowledge of the working styles, cultural, linguistic, economic and political differences, rate the degree of ease/difficulty of people from the following countries [present in your team] would experience when working together” (the answers ranging from 1-very easy, to 5-very difficult).

This database proves valuable for different reasons. First, two critical facets of psychic distance are distinguished (PDR-psychic distance as perceived differences and PDC-psychic distance as perceived difficulties). Second, it allowed to control for team- and individual-level characteristics in calculations of dyadic psychic distance. The following team characteristics were included: age diversity, gender diversity, and number of countries present on the team; the personal characteristics of the respondents were their age, their gender, their cultural intelligence, and their international experience. The dyadic psychic distance scores used were calculated based on the PDR and PDC scores each participant provided (ranked 1-5), (1) explained by the presence (1) or absence (0) of said country on the team (country dummies), (2) controlled for concrete objective aspects of diversity within the teams (age diversity: as the standard deviation of each team member's age; gender diversity: as the variance of each team member's gender, it ranges from 0 - perfectly homogeneous team, which means a team composed only of men or only women - to 0.5 - perfectly heterogeneous team, composed of an equal number of men and women; country diversity: the number of different countries of origin within each team) as well as (3) personal characteristics of the respondents (age, gender, cultural intelligence and international experience).

In the main analyses, the weighted coefficients of PDR and PDC are used as independent variables in the regressions, while the impact of their raw coefficients on FDI outstock is assessed in robustness checks.
Cultural distance. In this paper, cultural distance is added to some of the models to see whether the impact of psychic distance on FDI remains highly significant, and to see whether it has the same effect as psychic distance on FDI outstock. The measure of cultural distance included in the analyses uses data from the World Values Survey (WVS) and the European Values Study (EVS) to replicate Hofstede’s dimensions scores (Beugelsdijk, Maseland, & van Hoorn, 2015). I used the Kogut & Singh (1988) formula to calculate cultural distance using the above data. Hence my main analysis is based on these updated cultural distance scores.

Following common practice (Chung, Park, Lee, & Kim, 2015; Kwon, Haleblian, & Hagedoorn, 2016; Malhotra & Gaur, 2014; Mohr, Wang, & Fastoso, 2016; Smale, Björkman, Ehrnrooth, John, Mäkelä, & Sumelius, 2015) the Kogut & Singh (1988) index on Hofstede’s cultural dimension scores is used as robustness checks. In doing so I used the first four original Hofstede (1980) dimensions (uncertainty avoidance, masculinity, power distance, individualism). I would note that adding the two additional dimensions developed later does not affect my overall conclusion.

Control variables

The aim of this paper is to reveal the impact of psychic distance (as PDR and PDC) and cultural distance on FDI once all the gravity model effects are controlled for. Gordillo, Stokenberga & Schwartz (2010) list different advantages to using gravity models of trade (GMTs). First, the rationale behind them is highly intuitive yet displays great explanatory power. Second, a large body of scholarly work since the 1960s has grounded GMTs both empirically and theoretically (Anderson, 1979; Bergstrand, 1985; Deardorff, 1995; Helpman, 1987). Third, the data used to estimate GMTs comes from reliable sources (World Bank, CEPII, etc.) and is available for multiple years. According to Learner & Levinsohn (1995: 1384), gravity models of trade are “some of the clearest and most robust empirical findings in economics.” The gravity model describes bilateral flows between different points of origin (home countries) and destination (host countries). These flows depend on the size (usually measured in terms of GDP or population) of both countries forming the dyad (home and host country) and on the physical distance between them (Linnemann, 1966; Tinbergen, 1962; Wei, 2000). Large countries tend to attract more FDI and trade flows since they make economies of scale possible for MNEs settling there (Cuervo-Cazurra, 2006). The effect of geographic distance on bilateral flows is consistently negative, hereby constituting “one of the most robust findings in economics” (Castellani
et al., 2013: 651). Size and distance are generally complemented by additional indicators reflecting the ease or difficulty to transport products and/or transfer information and knowledge (Head, Mayer, & Ries, 2009; Kleinert & Toubal, 2010) from one place to the next: whether there exists a common land border between them, whether they share the same language, whether one has colonized the other (or whether they shared the same colonizer) thus having similar administrative traditions, and whether trade agreements exist between them (Baier, Bergstrand, & Feng, 2014; Cuervo-Cazurra, 2006; Frankel & Rose, 2002; La Porta, López-de-Silanes, Shleifer, & Vishny, 1998).

I use (the log of the) GDP (in US dollars, for the years 2001-2012) as a measure of the size of each country, and geographic distance to proxy physical distance between the home and the host country.

Geographic distances are measured as the (log of the) number of kilometers separating the countries’ major cities (in most cases, the capital cities). Data related to geographic distance, GDP (in USD, for the years 2001-2012), and dummies for common language, common border and former colonies are derived from the CEPII website.

Common language encourages FDI (Globerman & Shapiro, 2003) and trade (Filatotchev, Strange, Piesse, & Lien, 2007; Frankel & Rose, 2002). It facilitates communication with customers, business partners and employees alike (Harzing & Pudelko, 2014; Peltokorpi & Vaara, 2012; Tenzer, Pudelko, & Harzing, 2014). Managing across cultures requires of managers the arduous task to communicate as efficiently as possible in a way which diminishes misunderstandings and misinterpretations, thus reducing hazards (Luo & Shenkar, 2006; Zaidman, 2001). This is easier when the home and the host countries share a common language (Ali, 1995; Rao & Hashimoto, 1996). It simplifies business exchanges and thus decreases transaction costs (Doh, Bunyaratavej, & Hahn, 2009). A common border between home and host countries means that transporting goods and communication links are easier, which means increased chances to trade and embark on FDI (Campbell, Eden, & Miller, 2012; Cuervo-Cazurra, 2008). Frankel & Rose (2002) showed that colonial ties are a strong predictor of economic activity between two countries. The different dummies for common language, common border and colonial ties take the value 1 if at least one of the official languages of the host country is the same as the home country, if the two countries forming the country pair share a common land border, and if they share(d) colonial ties, 0 otherwise.
Data on the existence and strength of economic integration agreements is derived from the Economic Integration Agreements database (Bergstrand, 2015). Most studies rely on binary data (1-presence or 0-absence) to account for economic integration agreements. The database Bergstrand contributed to develop uses an ordinal index (0-6) and thus offers a much more accurate estimation of the reality of EIAs. Data for bilateral trade (2001-2012) was retrieved from the CEPII database. Given that most observations in this database report imports and not exports (429 765 vs 20 117 respectively), import data was transformed into export data to be subsequently included in the statistical analyses: if France imports $5m of products and services from Poland, it is equivalent to say that Poland exports $5m to France, so for imports FRA-POL=$5m and for exports POL-FRA=$5m. FDI stocks are logged and so is trade data.

Diagnostics

I calculated VIFs (variance inflation factors) for each regression coefficient to check for multicollinearity. Results are reported in Table 1. The ones for the GDP variables (log of the GDP of the home country, log of the GDP of the host country) were consistently high (in most models around 115). This is due to the fact that home and host countries were included as fixed effects in the regressions, and introduced as dummies specifically to run the VIFs, which produces inflated VIFs scores without necessarily introducing multicollinearity. Besides, high VIFs do not affect any of the independent variables, whose condition indices were all below 15 (Belsley, Kuh, & Welsch, 1980). Hence multicollinearity is not a concern here.

Insert Table 1 here

Regressions: gravity model equations

I estimate several gravity model equations, with the different measures of distance (cultural distance, psychic distance as perceived differences, psychic distance as perceived difficulties) added, over a period of 12 years (2001-2012). As prescribed in van Hoorn and Maseland (2016), several home countries and several host countries are included in the analyses. While 33 home countries and 35 host countries are represented in the database for psychic distance measures, the matrix is not complete: for example, psychic distance scores
from the participants from Bolivia (i.e., Bolivia as a home country) are only available for 8 host countries (Argentina, Bangladesh, Brazil, Cyprus, Italy, Norway, Panama and Peru) and not 34 if the matrix were complete. The first model of the analyses (i.e., the benchmark model) does not include measures of psychic distance on purpose, only variables for which a much larger number of observations was available (hence N = 47,106 for this one, but drops to N < 1800 when psychic distance measures (PDR and PDC) are included to the models. This analysis is intended as a horse-race between PDR, PDC, and CD.

Hausman specification tests indicate that the fixed effects model should be favored over the random effects model (Hausman, 1978; Hutzschenreuter, Kleindienst, & Lange, 2014). Following prior research (Chung, 2001; Tong, Alessandri, Reuer, & Chintakananda, 2008), the empirical tests employ a fixed period-effect to account for time-specific data trends and country fixed effects to account for unobserved heterogeneity such as the effects of macroeconomic factors.

RESULTS

Table 2 displays the correlation matrix. Consistent with previous literature (Anderson & Wincoop, 2003; Hanson & Xiang, 2004; Nocke & Yeaple, 2008), FDI is negatively correlated with geographic distance (-0.14) and positively correlated with the GDP of the home (0.42) and of the host country (0.25).

Insert Table 2 here

The design is based on gravity model trade equations. Table 3 presents the results of a set of panel regressions with bilateral FDI outstock as the dependent variable with a set of gravity model equation control variables controlled for the level of trade, to highlight the impact of cultural distance and psychic distance measures (PDR and PDC).

Insert Table 3 here
Models 3 to 5 add measures of psychic distance (PDR in Model 3, PDC in Model 4, PDR & PDC in Model 5) to the benchmark model displayed in the second column. Model 6 controls for cultural distance, calculated using scores from the World Values Survey and the European Values Study (Beugelsdijk et al., 2015). PDR has a significant and negative impact on FDI outstock, suggesting that perceived differences deter FDI. This is consistent with what the literature suggests for other types of distance (Beugelsdijk & Mudambi, 2013; Coe et al., 2002; Frankel, 1997; Leamer, 1993). Conversely, PDC has a significant and positive impact on FDI outstock, suggesting that perceived difficulties encourage FDI. This constitutes a counterintuitive and interesting finding.

Indeed, psychic distance (as perceived differences and as perceived difficulties) play a significant role in explaining FDI outstock, the variable chosen here to assess the extent of MNE international activity occurring between home and host countries. PDR and PDC have distinct effects: while PDR deter FDI, PDC encourage it. Cultural distance has a significant and negative effect on FDI outstock (Model 6 in Table 3). More importantly, the effect of PDR and PDC does not change dramatically once cultural distance is added to the regressions. PDR and PDC have opposite effects on MNE activity. PDR and PDC appear different from one another since they remain significant even when both included in regressions, and continue to be so even with the inclusion of cultural distance. This suggests that PDR, PDC and CD are all distinct concepts which all impact FDI. The results suggest that cultural distance has effects on FDI similar to the effect of PDR but distinct from PDC.

Robustness checks

Alternative measures of psychic distance. One should be careful when interpreting these results since the number of observations is relatively low (N < 1800 for Models 2-6). FDI and trade data, as well as WVS-EVS scores on which the cultural distance variables are calculated, were not always all available for the country pairs for which bilateral psychic distance scores were calculated, resulting in a substantial number of missing observations removed through listwise deletion. They were available to a much greater extent for the bilateral psychic distance scores from the Håkanson & Ambos (2010) paper. Therefore, for comparison and robustness purposes, psychic distance scores from their paper were added. It increased the number of observations threefold. Their definition of psychic distance (“the subjectively perceived distance to a given foreign country”, p. 196) is in line with several scholars (Dow, 2000; Dow & Karunaratna, 2006; Sousa &
Bradley, 2005; Stöttinger & Schlegelmilch, 1998). While Håkanson & Ambos (2010) recognize that psychic distance can greatly differ from one individual to the next, aggregating these individual scores at the country level sheds light on what the average perceptions of one country towards another are (Dow & Karunaratna, 2006; Håkanson & Ambos, 2010a). The sampled population is different (“academically trained managers mastering the English language and with four or more years of business experience” (Håkanson & Ambos, 2010a) vs. students), which actually addresses one of the limitations mentioned by the authors: “the dependent variable measures the perceptions of managers and is not necessarily representative for the entire populations of the countries surveyed. (…) Our results may say little about the perceptions of managers who do not master English at all.” (Håkanson & Ambos, 2010a) The population sampled in X-Culture is younger (average age: 23 vs 36.87), and it should be noted that women (52.27% vs 28%) as well as individuals who are proficient in English to varying degrees are more represented. The results reported here are also not exclusively about the richest countries (Håkanson & Ambos surveyed participants in the 25 largest economies worldwide) but include countries which are classified as low-income economies (e.g., Ghana) to high income economies (e.g., the USA). In their paper and in this one, psychic distance remains treated as based on individual perceptions and subsequently aggregated at the country level. The respondents assessed the extent to which they perceive each of the other 24 countries (they did not rate their home country) to be close or far away in terms of psychic distance. They surveyed more than 1400 respondents, yielding 600 country pairs.

Table 4 shows the results of my first robustness test using Håkanson & Ambos’ data. For comparability I copy the benchmark model from Table 3 (model 2 in Table 3) as model 1 in Table 4. Model 2 in Table 4 is my first robustness test and shows that the alternative measure of psychic distance has a negative and significant relationship with FDI. This finding is in line with my negative and significant result for PDR. I would note that adding cultural distance to model 2 in Table 4 does not change the finding on Håkanson & Ambos’ measure of psychic distance (results not shown but available upon request). The fact that adding cultural distance does not change the effect of psychic distance on FDI corroborates the finding in Table 3.

Alternative measures for the size of the countries: GDP in PPP and population. Alternative measures of the size of each country include the GDP expressed in purchasing power parity or international...
dollars (Bergstrand, 1989; Kohl, 2012) to which is sometimes added the number of inhabitants in each country (Anderson, 2014; Cuervo-Cazurra, 2008). As a robustness check I substituted these measures to the one I mentioned earlier. My main results do not change (analyses available upon request).

*Alternative considerations for the large number of 0s in FDI outstock.* There were a large number of 0s in my database, which led me to test different options (Linders & de Groot, 2006). I checked three different scenarios: (1) the missing observations were not replaced by 0 (0s and NAs remain as such in the database); (2) I replaced the 0s by a small number; and (3) I ran a Heckman two-step procedure (described afterwards). While some coefficients of control variables become non-significant, my results remain overall robust no matter which scenario is pursued.

To test for selection bias I followed the procedure suggested by Heckman (1979). The first step is the selection equation, a probit model in which the dependent variable (FDI outstock) is a dummy variable (1 if there is FDI outstock coming from the home to the host country, 0 otherwise). This first step serves to calculate the inverse Mills ratio which is then used in the second step to control for selection bias. The second step is the estimation regression equation: for the home countries engaging in FDI with the host countries in the different country pairs, the extent of their investment is studied in a linear regression. It is important to specify the selection equation so that at least one variable which has no direct effect on the dependent variable determines selection, so that collinearity problems are avoided in the second stage of the Heckman procedure (Söderbom, 2009). Thus, I used Common language as the exclusionary variable in the first stage since it can be considered that having a common language matters more for the decision to invest in that country or not than for how much to invest. Besides, preliminary analyses showed that this variable is highly significant in the first stage of the Heckman procedure but is not significant in the second one. Table 5 presents the results of the main analysis (similar to Table 3) once the variable Common language has been removed. The independent variables used in the estimation regression equation are the same ones except the Common language dummy. If the inverse Mills ratio is not significant, it means there is no selection bias and that a one-step procedure is sufficiently reliable; it the inverse Mills ratio is significant, it means there is a selection bias and that in this case the Heckman two-step procedure is better suited. The inverse Mills ratio for this model is not significant, suggesting there is no selection bias for this model.
DISCUSSION AND CONCLUSION

I investigated the impact of psychic distance (PDR and PDC) and cultural distance scores on FDI, proxy for MNE activity, in a horse-race inspired analysis to see which one was driving the outcome variable the most. I find that while PDR and cultural distance both have separate, negative impacts on FDI outstock, PDC has qualitatively different effects: it affects FDI outstock positively, a result which remains significant even when cultural distance is added to the model. This result contributes to the idea that PDC is a unique dimension of distance.

While the findings show the importance of psychic distance for FDI, the analysis clearly suggests that different facets of this construct have different effects: perceived differences deter while perceived difficulties encourage FDI outstock. While the former was expected since in line with previous research on other types of distance (Beugelsdijk & Mudambi, 2013; Coe et al., 2002; Frankel, 1997; Leamer, 1993), the latter constitutes a thought-provoking take on the relationship between the perception of diversity and international investment. This finding raises new and interesting questions about the drivers of MNE activity, challenging the “less is better” approach usually associated with the different types of distance (Beugelsdijk & Mudambi, 2013), and the concept of psychic distance itself.

Differences, unlike difficulties, can be considered as fixed, externally imposed constraints. Empirical analyses have shown that while the scores of each country on the different Hofstede dimensions slightly vary over time, the differences between countries remain virtually the same (Beugelsdijk et al., 2015). Differences can be understood and responded to; not changed. They define the structural attractiveness of a location, because they determine the fit with the firm’s way of doing business. As differences are a given to the firm, the main response of organizations is likely to be adapt their extent of involvement depending on the degree of differences. The amount of perceived difficulties, by contrast, is less of an external constraint and more something manageable by firms. Difficulties are about short-term obstacles that may be overcome, while not affecting the structural attractiveness of a location. Difficulties associated with doing business abroad can be overcome through learning and time, and investment in bridging mechanisms. Because difficulties are
perceived as manageable and potentially decreasing over time thanks to experience and control, it is seen as tempting to resort to control-intensive modes of entry for host countries towards which a large PDC is perceived.

Increasingly intense competition (Murray, Gao, Kotabe, & Zhou, 2007; Oviatt & McDougall, 1995) has led many firms to do business in virtually every part of the world, having to be present in markets which are not necessarily their first or safest choice. They may also opt to be in those markets for reputation purposes (having the image of being a global brand, being present in the biggest cities in the world), to send a strong message to both their customers base and their competitors. Since MNEs are pressured to be in markets which may carry a high risk, they are likely to opt for FDI, which provides the highest level of control in the hope that the uncertainty associated with such investment will be reduced, and thus their chances of success and survival are increased. What is more, one may expect them to devote more resources to locations perceived as difficult, precisely because more investment is required to address those difficulties.

This may explain why perceived difficulties encourage rather than deter FDI. There is this entrenched belief that difficulties can be overcome by dedicating more resources to the venture, providing more control, thus opting for high levels of investment commitment. This illusion of control may stem from overconfidence on behalf of decision-makers (Brown & Kobayashi, 2003; Hahn, Preuss, Pinkse, & Figge, 2014; Li & Tang, 2013). Another explanation is that, once it has been decided to go to a specific location, the only thing left to do to manage difficulties is to dedicate more resources to the venture, thus increasing the total amount of FDI. While the total amount of FDI captures both the extensive and intensive margins simultaneously, representing both the location choice and the choice about the amount of resources devoted to these locations, FDI outstock is likely to be dominated by the internal margin.

Contributions

First, I offer further evidence that psychic distance is actually a multi-faceted concept. The results of this paper demonstrate that PDR and PDC have opposite effects on MNE international activity, confirming they are indeed distinct. Second, psychic distance has an impact on FDI. Adding psychic distance to the models increases the explained variance, demonstrating that a non-negligible part of the variance stems from perceptions, and not only from objective differences or classic trade variables. Using panel data in the
context of the gravity equation model of trade, I show that PDR and PDC both have a significant effect on FDI (negative for PDR, positive for PDC), and PDR yields the same results as the psychic distance scores from the Håkanson & Ambos (2010) study. Also, cultural distance has a significant and negative impact on FDI, a result in line with Benito & Gripsrud (1992), Rose & Ito (2008), and Sullivan & Bauerschmidt (1991), for instance. I argued earlier that psychic distance and cultural distance should be considered as different constructs; they have distinct consequences on a same dependent variable, providing further empirical evidence that they are distinct.

**Limitations**

First, my dyadic psychic distance scores were calculated on students rather than managers. While a student sample may be acceptable in psychology research (Bello, Leung, Radebaugh, Tung, & van Witteloostuijn, 2009), it is not ideal in business studies. However it should be noted that the students undergoing this project can be considered as “the managers of tomorrow” (Magnusson, Schuster, & Taras, 2014). Besides this limitation does not hold for the models run with the psychic distance scores from the Håkanson & Ambos (2010) study which were derived from experienced managers. As explained earlier, using these scores does not contrast with my results, so I feel this limitation does not seriously put into question the validity of my study.

Second, while longitudinal data was available for all of my dependent and control variables, it was not for my independent variables. Therefore, the analyses rely on the assumption that psychic distance scores and cultural distance indices remain constant over time. Psychic distance scores calculated at different points in time, perhaps spanning decades, would account for variations in perceived differences and difficulties over time, providing interesting insight on what contributes to reducing or enhancing perceived differences and difficulties.

**Avenues for further research**

The results of this paper offer promising avenues for further research in a number of directions. First, they suggest that a shift from objective distances to perceptual ones may provide additional insight for studies aiming to have a better grasp of what FDI. As such, the impact of psychic distance could be extended to other types of international investment as well (beyond the scope of FDI outstock and location choice).
Second, they demonstrate that psychic distance is a multifaceted concept (here, perceived differences and perceived difficulties), with varying consequences on MNE activity. Future research should reveal additional dimensions of psychic distance and explore the consequences each has on a variety of IB issues (location choice, entry mode, expatriates well-being, etc.), but also whether they are static or dynamic, possibly drawing from the typology of animosity in cross-cultural psychology: either situational or stable, and either national or personal (Jung, Ang, Leong, Tan, Pornpitakpan, & Kau, 2002), and from tourism research (country/destination image), distinguishing between pre-, post- and non-visit in the country (Beerli & Martín, 2004; Cherifi, Smith, Maitland, & Stevenson, 2014). Third, the distance literature could delve into explaining the discrepancy or mismatch between objective and perceived and what the consequences of such mismatch are on different IB phenomena.
## APPENDIX

<table>
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Table 1 – Variance inflation factors (VIFs)
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Table 2 – Correlation matrix
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</tr>
<tr>
<td>Colonial ties</td>
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<td>1.301***</td>
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<td>1.534***</td>
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<td>(0.054)</td>
<td>(0.053)</td>
<td>(0.054)</td>
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<td>-0.822***</td>
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<td>0.514***</td>
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<td>(0.070)</td>
<td>(0.071)</td>
<td>(0.085)</td>
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Observations: 47,106  1,721  1,721  1,721  1,721  1,548
R2: 0.591  0.833  0.834  0.834  0.836  0.839
Residual Std. Error: 2.136 (df 1.642) 1.641 (df 1.637) 1.630 (df 1.593) 1.465

Note: p<0.1; p<0.05; p<0.01

Table 3 – Results table
Table 4 - Robustness checks

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<td>1.372***</td>
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<td>Cultural distance</td>
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<td>(0.065)</td>
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<td>Geo. distance (log)</td>
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Observations: 1,721 5,733 1,721 1,721 917
R2: 0.833 0.683 0.833 0.834 0.881
Residual Std. Error: 1.642 (df = 1,635) 1.856 (df = 5,664) 1.641 (df = 1,634) 1.638 (df = 1,634) 1.340 (df = 850)

Note: p<0.1; p<0.05; p<0.01

Table 4 - Robustness checks
- Model 2: alternative measure for psychic distance (Hakanson & Ambos, 2010, data)
- Models 3 & 4: alternative measure for psychic distance (raw coefficients instead of weighted ones)
- Model 5: alternative measure for cultural distance (Hofstede scores instead of WVS-EVS study)
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<td>(0.227)</td>
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<td>(0.236)</td>
<td>(0.236)</td>
<td>(0.235)</td>
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<td>(0.053)</td>
<td>(0.052)</td>
<td>(0.052)</td>
<td>(0.056)</td>
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<td>Geo. distance (log)</td>
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<td>(0.176)</td>
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<td>Trade (log)</td>
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<td>0.382***</td>
<td>0.439***</td>
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<td>1,721</td>
<td>1,721</td>
<td>1,721</td>
<td>1,548</td>
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<tr>
<td>R2</td>
<td>0.588</td>
<td>0.833</td>
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<td>0.834</td>
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<tr>
<td>Residual Std. Error</td>
<td>2.143 (df = 46762)</td>
<td>1.642 (df = 1636)</td>
<td>1.640 (df = 1635)</td>
<td>1.637 (df = 1635)</td>
<td>1.629 (df = 1634)</td>
<td>1.595 (df = 1466)</td>
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</table>

Table 5 – Results table (without the Common language variable)
REFERENCES


Dunning, J. H. 1993b. *Multinational enterprise and the global economy* (Wokingham,..).


Em, L. 2011. Disentangling the different concepts of distance: a lexicographic exploration of the past 20 years of the *JIBS*: 0–63. Academy of International Business Annual Conference in Nagoya, Japan.


Hahn, T., Preuss, L., Pinkse, J., & Figge, F. 2014. Cognitive Frames in Corporate Sustainability: Managerial


Hutzschenreuter, T., Kleindienst, I., & Lange, S. 2014. Added psychic distance stimuli and MNE performance: Performance effects of added cultural, governance, geographic, and economic distance in MNEs’


\[\text{Weighted coefficient} = \frac{\text{raw coefficient}}{\text{standard deviation}}.\]
It only did when calculated with all six Hofstede cultural dimensions and when the number of observations was really low (the effect disappeared when psychic distance scores from Håkanson & Ambos (2010) were substituted).